SESSION I
TIME: Tuesday 9 May, 10:30-12:00
ROOM: Elizabethan Room A
TRACK: Inland and Deep Draft Navigation
TOPIC: Navigation and Plan Formulation
MODERATOR: Dave Weekly, Huntington District

PRESENTATIONS:

Title: Plan Formulation in a Constrained Budget Environment
Presenters: David Grier, IWR; Mark Hammond, Huntington District

Abstract: The Inland Waterways Users Board, an industry Federal advisory committee, was established by Congress in WRDA 86 to make recommendations to the Secretary of the Army on construction and rehabilitation projects on the inland waterways of the United States. The Corps is the proponent for the Board and the DCW serves as Executive Director of the Board. Board members are appointed by the Secretary of the Army and represent a range of geographic areas, commodity groups, and both shippers and carriers. The Board meets two or three times a year and submits an Annual Report to Congress with its recommendations for navigation investment priorities to be cost-shared from the Inland Waterways Trust Fund. The Board's Annual Report highlights industry priorities for seven ongoing lock modernization projects, three major rehabilitations, and numerous projects in PED or under study. The Board also expresses alarm about constrained funds that have slowed project completion schedules, delayed initiation of urgently needed major rehabilitations, added to the likelihood of unscheduled lock closures, and resulted in the loss of over $5 billion in navigation benefits that can no longer be recovered. However, the Trust Fund would be quickly exhausted if all projects proceed at higher funding levels.

Title: Innovative Dredging Analysis of Federally Authorized/maintained Small Boat Harbors
Presenters: Kevin W. Bluhm, St. Paul District; Jason Weiss, URS

Abstract: Innovative Dredging Analysis of Federal small boat harbors. Four Federally maintained small boat harbors on The Lake of the Woods Minnesota were in need of supplemental dredging and past work was very costly and each harbor analyzed separately. The goal of the decision document was to give management a better decision tool that would show the real need, or value of the harbors, and several potential methods to optimize future dredging activities by performing various activities at one time, advanced dredging, or innovative (non-traditional) dredging techniques. An optimization table was built into the analysis and alternative dredge concepts were explored to give several future investment streams and allow operations persons to look at the big picture for the investment. Issues like harbor of refuge, use analysis and regional benefit analysis were addressed. The information has been beneficial for the local governments to see value/impacts, and for the Corps decision makers.

Title: **Fix or Fail, Evolution of a Rehab**
Presenter: **Craig Newcomb, Walla Walla District**

Abstract: As our projects age infrastructure investments are necessary to assure full operational capability. Throughout the Corps many projects are well beyond design life and in need of repair. In 1995 Ice Harbor Dam downstream lock gate was replaced under emergency repair due to accelerated fatigue cracking, and various projects have replaced valves, hoist machinery, controls and other equipment. In 2002 structural cracks associated with pintle bearing on Lower Granite downstream miter gate necessitated emergency repairs. Major rehabilitation repair work was identified to rehabilitate Lower Monumental navigation lock for a total of $26.6 million for plans, specifications and construction, and it was to be completed under the Major Rehab Program. This presentation will highlight the collaborative efforts of the Walla Walla District and other districts, along with the Institute of Water Resources, Inland Waterway Users Board, and others to complete the Lower Monumental Lock and Dam Major Rehabilitation Report. The Product Delivery Team reached throughout the Corps to learn form others and enlist their experience. They had to find a model, gather information, calculate reliability data, and estimate economic and environmental consequences. The process was a continual joint effort among all involved as the engineering and modeling evolved.

Title: **Deep Draft Navigation in the South Atlantic Division – An Overview**
Presenters: **Terry Stratton, South Atlantic Division**

Abstract: The purpose of this presentation is to provide an overview and information on deep draft ports in the Southeastern United States. There are some 43 deep and shallow draft ports in the South Atlantic Division. This presentation will discuss ports from North Carolina to Mississippi – specifically Wilmington NC, Charleston SC, Savannah GA, Brunswick GA, Jacksonville FL, Port Everglades FL, Miami Harbor FL, Tampa Harbor and adjacent ports FL, San Juan PR, Mobile AL, and Pascagoula MS. Presentation will discuss recent studies, construction, unique O&M practices, hurricane impacts, and future trends. The National Center of Expertise for Deep Draft Navigation will also be briefly covered.

SESSION I
TIME: Tuesday 9 May, 10:30-12:00
ROOM: California West
TRACK: Ecosystem Restoration
TOPIC: Collaborative Funding, Formulation, and Data
MODERATOR: Valerie Hansen, Kansas City District

PRESENTATIONS:

Title: Lessons Learned in Public Private Collaboration in the North Atlantic Division
Presenter: Bill Hubbard, New England District

Abstract: Budget reality and private interest have coalesced in the creation of a new venue to support ecological restoration in the region. The Corporate Wetlands Restoration Partnership (CWRP) is an innovative private-public initiative aimed at preserving, restoring, enhancing and protecting aquatic habitats. Bringing together corporations, federal and state agencies, non-profit organizations and academia, CWRP allows members to contribute in a fundamental way to crucial projects involving America's wetland habitats. More than 200 corporate partners have contributed time and money to facilitate projects. Since its 1999 inception, when the Gillette Company partnered with the Massachusetts Executive Office of Environmental Affairs and the U.S. Environmental Protection Agency, this venue has generated $3 million in contributions and pledges of in-kind services supporting CWRP goals. This presentation would examine the set-up and operations of the CWRP Public/Private partnership.

Seeking to foster positive working relationships among corporations, government agencies, non-profit organizations and communities is one of the primary goals of the CWRP. This unique approach to aquatic habitat enhancement results in the maximum application of government funds for projects. Using corporate contributions, combined with government and other funds, the CWRP contributes vital resources to projects needing funding and support. The ability to leverage federal dollars with contributions makes the CWRP initiative truly unique in restoration, protection, enhancement and preservation efforts.

Title: Ballona Creek Ecosystem Restoration Feasibility Study
Presenter: MaLisa Martin, Los Angeles District

Abstract: Ballona Creek Watershed consists of a170 sq. miles of highly urbanized landscape (80 percent) and many municipalities and will take a comprehensive watershed approach to restore and enhance the creek and remaining wetlands. The study will investigate the feasibility of riparian restoration and soft bottom configuration along the Creek and at with two tributaries, opportunities for water storage in the upper watershed, and restoration options for scarce coastal wetlands and lagoons.

The challenging aspects of the study are due to the disparate locations of project units, complex mix of sponsors, and the past 30 years of litigation. The Creek winds it way through many Cities and the Study like the Creek, involves many sponsors: City of Los Angeles, County of Los Angeles, Culver City, Baldwin Hills Conservancy, Santa Monica Mountains Conservancy, California Coastal Conservancy, and our main sponsor the Santa Monica Bay Restoration Commission. The benefits have been notable, like despite not getting allocations remotely near

our executable budget for FY06, the study is moving along, amazingly, close to schedule. Additionally the famously litigious stakeholder groups are supportive of our efforts, and we have a large coalition ringing the congressional offices.

Title: Using Virtual Tours to Evaluate Ecosystem Restoration Alternatives
Presenter: Camie Knollenberg, Rock Island District

Abstract: Lake Belle View Feasibility Study presented a challenging opportunity to solve a complicated water resource problem while serving a non-traditional sponsor and multiple stakeholders. The recommended plan allows the community to maintain their lake while achieving the Wisconsin Department of Natural Resources' and Dane County's goal of restoring flow to the Sugar River, in effect achieving dam removal. After evaluating the full array of alternative plans, the team identified four "best buy" plans. To aide the sponsor and stakeholders in selecting a recommended plan, the team used virtual tours of the plans to demonstrate what the various measures would look like and the impact of each plan on the community's aesthetics. The tour provided 360-degree before and after views of the best buy plans from six locations in the project area. This innovative tool proved invaluable at public and stakeholder meetings to convey the design of each plan.

Title: Streamlining South Florida CERP Water Quality, Biological, Physical Data Access Using USACE Datanet Web Services
Presenters: Peter Besrutschko, Jacksonville District; Denise C. Martin, Jacksonville District; James T. Stinson, ERDC; Greg Walker, ERDC; Ken Pathak, ERDC

Abstract: The Corps of Engineers, Jacksonville District and ERDC Vicksburg plan to use the DataNet web services based data management system to develop a prototype application for the Everglades Restoration. The prototype will be used to view and process project data which has been collected and stored by other federal, state and local agencies. The DataNet system uses a new technology that is comprised of callable programs or software components called Web Services. The Web Services instantly acquire data now inefficiently and inconsistently accessed from ftp, http, CD, data servers, etc. The primary benefit of this approach is a considerable time savings to Scientists and Engineers who acquire, reformat, transform, and organize data. Moreover, data are typically available in disparate formats and structures, unnecessarily complicating simple retrievals . This may result in needless requests for additional data collection and monitoring, or suboptimal decisions based on partial data. This prototype would allow most data collected, QA/QCed, and stored by others to be automatically reformatted to a standard, allowing diverse sources to be viewed as if the data resided within a single data set. For example, water quality data is currently being collected and stored all over the country, by different agencies, with different data structures and standards.

The current plan is to develop the DataNet web services prototype to provide coverage for the entire State of Florida for all NEPA related project data needs.

SESSION I
TIME: Tuesday 9 May, 10:30-12:00
ROOM: Elizabethan Room B
TRACK: Flood & Coastal Storm Damage Reduction
TOPIC: Innovative Analytical Procedures & Tools
MODERATOR: Tom Hughes, HQ

PRESENTATIONS:

Title: **Pajaro River Flood Damage Reduction Study: Lessons Learned from an HEC-FDA (version 1.2) Model Limitation**
Presenters: **Eric Thaut, San Francisco District; Timi Shimabukuro, San Francisco District**

Abstract: The town of Pajaro and the city of Watsonville, located about 75 miles south of the city of San Francisco, are subject to flooding from several sources, which include the Pajaro River, Corralitos Creek and Salsipuedes Creek. It is estimated that levees built in 1949 by the U.S. Army Corps of Engineers provide protection to the towns from a 10- to 20-year flood event. Significant flooding and damages in the area have occurred as recently as 1998. A General Reevaluation Study is currently underway to reevaluate a 1966 authorized project to increase the level of flood protection provided by the existing Federal project.

Water surface profiles, probability-discharge functions, rating curves, ***exterior-interior relationships,*** and ***geo-technical levee failure curves*** were used to compute stage-damage curves, expected damages/benefits, and project performance statistics in HEC-FDA for this study. However, the current version (v1.2) of HEC-FDA does not allow for the use of ***exterior-interior relationships*** and ***geo-technical failure curves*** at the same time. The presenters will summarize the reasons for using exterior-interior relationships and geo-technical failure curves in the Pajaro study, the HEC-FDA (v1.2) model limitation (not being able to use exterior-interior relationships and geo-technical failure curves at the same time), some of the effects this limitation has had on the project (e.g., to damages/benefits), the “work around” to this limitation, and some of the lessons learned from this project thus far.

Title: **Plan Formulation for Urban Flood Damage Reduction on White Oak Bayou - How to reduce 12,000 Model Runs to 100 Model Runs**
Presenters: **Wayne Crull, Harris County Flood Control District; Steve Fitzgerald, Harris County Flood Control District**

Abstract: Identification of the NED Plan is a challenge, especially when there are many interdependent components or measures. Rarely can a study team perform an exhaustive analysis involving optimization and combinations of all possible permutations. If only 2 compatible measures are available, then a study team can at least consider analysis of many possible permutations involving different component sizes. But how can you be confident of identifying the NED plan when the number of components is large enough that considering all possible permutations would require thousands of runs? Exhaustive analysis of even eight components with a minimum of three sizes would require over 12,000 cases be evaluated.

This presentation demonstrates the pitfalls of permutation overload and a strategy to overcome this predicament that can effectively reduce the number of cases to less than one hundred. This

process was employed by the Harris County Flood Control District as the lead planner for the Section 211(f) White Oak Bayou Flood Damage Reduction Project General Reevaluation Study.

Title: **Mapping Structure Flooding and Damages Using HEC-FDA and GIS**
Presenter: **Doug Symes, Honolulu District**

Abstract: Several useful techniques will be demonstrated for producing graphic and tabular output from the "FDA_StrucDetail.out" file, using Excel to create 2D and 3D illustrations of the distribution of the flooding of structures along the length of a stream by flood depth and event frequency. Uses include providing graphic feedback for design and review of hydraulic models and report illustration. The FDA_StrucDetail.out file may also be used to estimate the number of residential or commercial structures flooded by different frequency events when one is called on to report damages prevented by Corps projects.

Title: **Collaborative Approach to FEMA Map Modernization: National FEMA PDT.**
Presenters: **Kate White, Engineer Research and Development Center- Cold Regions Research Laboratory; Jerry Webb, Headquarters, U.S. Army Corps of Engineers**

Abstract: With its institutional knowledge of regional water resources management, numerical modeling capabilities, and familiarity with local conditions over a long time period, the U.S. Army Corps of Engineers (USACE) provides value-added service to the Federal Emergency Management Agency (FEMA) in many aspects of its mission. The Corps is now continuing in that tradition by assisting FEMA in its Map Modernization Program (MapMod) to update its flood hazard mapping by converting hard copy flood maps to digital format. USACE Districts working with, or hoping to work with, FEMA on MapMod studies realized that collaboration and streamlining communications would be beneficial to the Districts and to FEMA largely because FEMA regional boundaries cross state and USACE Division and District boundaries.

In the spirit of the Corps' 2012 reorganization, a National Project Delivery Team (PDT) was formed in October 2004 with the objectives to provide nationwide support to FEMA for its MapMod and other H&H studies, and to provide for capacity building to the Hydrology, Hydraulics, and Coastal (HH&C) Community of Practice (CoP) members. This presentation describes the National FEMA PDT and its activities to date, including two multi-District, multi-Division projects and intensive training.

SESSION I
TIME: Tuesday, 9 May, 10:30-12:00
ROOM: Elizabethan Room C
TRACK: Watershed/System Assessment
TOPIC: Case Studies in Regional & Collaborative Planning
MODERATOR: Jennifer Owens, Wilmington District

PRESENTATIONS:

Title: Watershed Analysis are the Foundation for Water Resources Project Development
Presenter: Derek J. Chow, Honolulu District

Abstract: Comprehensive watershed analyses are the foundation for proper watershed project planning and implementation. A holistic approach allows for a greater appreciation of the problem dynamics and the formulation of coordinated solutions. These coordinated solutions have a much greater chance of implementation through government programs. The Ala Wai Watershed Analysis was conducted during the problem identification stage of the Ala Wai Canal Project feasibility study. The Corps of Engineers facilitated the multi-agency effort in the development of the Watershed Analysis. The Watershed Analysis is a useful tool not just for the Corps of Engineers, but also for any agency and organization having responsibility for and interest in the watershed. For significant watersheds, there may be 20 or 30 or more public and private entities involved in projects, programs, and actions within that watershed. This presentation will document how a comprehensive watershed analysis in Hawaii has built trust and cooperation amongst all levels of government agencies, organizations, property owners, community groups, elected officials, and academia. We are taking advantage of this dedication to work together to develop lasting solutions to watershed problems.

Title: The Green-Dewamish Ecosystem Restoration Program: Bringing Together the Watershed
Presenter: Michael R. Scuderi, Seattle District

Abstract: The Green-Duwamish watershed, in western Washington, covers a wide variety of habitats, ranging from headwater natural forests to the intensely urbanized and industrial Seattle waterfront. Overlying this habitat mosaic are multiple jurisdictions, Federal reservations, and tribal usual and accustomed (U&A) hunting and fishing areas. The watershed contains several federally listed endangered species, Puget Sound Chinook salmon, bull trout, and bald eagle. Formulating a cost effective ecosystem restoration program that addresses the interests of a wide variety of stakeholders, and meets the varied planning and restoration objectives, presents a formidable challenge.
The resultant Green-Duwamish Ecosystem Restoration Program (ERP) was developed with the cooperation of 17 municipalities within King County, Washington, working together with the overarching goal of restoring the inherent functions and values of the Green-Duwamish ecosystem, and in particular to assist the recovery of Puget Sound Chinook salmon. Based on this successful collaboration, Congress authorized $113 million to construct 45 restoration projects over a ten year period. The first project, the Meridian Valley Creek relocation, was completed in 2005. This presentation will describe the mechanics of setting up the ERP, and then focus on how this robust collaboration was carried forward during development of the first ERP project.

Title: **Collaborative Implementation Framework for Illinois River Basin Restoration**

Presenter: **Brad Thompson, Rock Island District**

Abstract: The Corps of Engineers and Illinois Department of Natural Resources (sponsor) working in coordination with numerous state and Federal agencies developed a comprehensive plan for the restoration of the Illinois River Basin as authorized in Section 519 of the Water Resources Development Act (WRDA) of 2000. The watershed based restoration study developed the goals, objectives, and recommended plan to restore the ecological integrity of the 30,000 square mile basin. The plan recommends a tiered approach with initial implementation of a $127 million adaptive restoration program and a $24 million technologies and innovative approaches component that includes monitoring and special studies. The study addressed all restoration needs regardless of implementation agency and developed a multi-agency implementation approach. This presentation will highlight the efforts to estimate the amount and type of future work by agency and to develop an organizational structure providing a forum for collaboration. Specific legislative recommendations to facilitate more efficient collaboration with other Federal, state, local, and non-governmental organizations will be presented. The scale of collaboration for this study will be compared with other large-scale restorations in terms of the level of National attention, involvement of other agencies, and commitment of the financial resources of other agencies.

Title: **Using System-wide Water Engines and Ecological Models for Habitat Suitability Prediction**

Presenters: **Elly Best, ERDC; Ronnie Landwehr, Rock Island District**

Abstract: In the Corps Planning Process to be followed for ecosystem restoration studies, six steps can be distinguished, i.e., (1) Specify problems and opportunities, (2) Inventory and forecast conditions, (3) Formulate alternative plans, (4) Evaluate effects of alternative plan, (5) Compare alternative plans, and (6) Select recommended plan. Among these six steps, the development of scenario's and scenario-based alternative plans play important roles. The ecological functions of many shallow water bodies are impaired due to the loss of submersed aquatic vegetation and its' function of stabilizing sediments, enhancing water transparency, and providing suitable habitat for epifauna, fish, and waterfowl. Various system-wide restoration projects are underway, in which part of the project is aimed at restoring aquatic vegetation. Recently, a set of CE-models on hydrodynamics, sediment transport, and aquatic plant viability, has been explored for the restoration/enhancement of aquatic vegetation in pools of the Upper Mississippi River System. A prototype study was conducted on Peoria Lake, IL, where submersed vegetation disappeared in the 1950's. The CE-models were used to explore the historical environmental conditions under which the plants thrived and subsequently disappeared, and to compare historical with current environmental conditions to evaluate the key conditions in aquatic ecosystem functioning. Output of the various models was used to map current and potential, future, habitat suitability for submersed vegetation under various, planned, model scenario's. The results of these model explorations can be used as inputs for decision support systems utilized for ecosystem restoration systems.

SESSION I
TIME: Tuesday 9 May, 10:30-12:00
ROOM: Elizabethan D
TRACK: Planning Community of Practice
TOPIC: Evaluation Across the Four Accounts
MODERATOR: Jim Conley, South Atlantic Division

PRESENTATIONS:

Title: Regional Economic Development (RED) Examined – the Importance to Alaskan Project Sponsors
Presenters: Lorraine Cordova, Alaska District

Abstract: Corps projects are concerned with the measurement of benefits to U.S. residents. Benefits transferring from one region to another provide no net gain. However, leaders at the community, city, county, borough, or state level are much concerned with the transfer of benefits between regions. By recognizing these transfers, the Corps assists communities in the decision-making process. Educating community leaders about program authorities, project development alternatives, and sponsor contributions is not enough. Community leaders must also think about the impacts to employment, public utilities, school enrollment, and tax base.

The Regional Economic Development (RED) benefit analysis is important to the Corps because it allows informed decisions about project sponsor's cost-sharing capability, and provides good will to and educates the sponsor on the real risks and benefits associated with a project.

A recent evaluation of Alaska projects found that more than 70 percent would not move past the reconnaissance level analysis because the project sponsor was unable to cost share. Information provided in the RED analysis helps the sponsor apply for grants and loans, making a project that might otherwise go unfinished viable. RED analysis serves the dual purpose of encouraging sponsor support and allowing the Corps to complete much-needed projects throughout the nation.

Title: The Importance of the OSE Account in Rural Alaskan Projects
Presenters: Brian Harper, IWR and Daniel Werkmeister, Alaska District

Abstract: The Other Social Effects (OSE) account as described in ER 1105-2-100 has historically been a small piece of the COE's economic analysis reports. NED benefits have generally guided the development of our planning. Economists have focused effort primarily on this account in order to obtain approval of COE civil works water resource related projects. Alaska has been and always will be an entirely different place than the lower 48. Most Alaskan civil works projects are in locations that are rural. Barrow for example, the northern most community in North America, lying north of 71 degrees north latitude, is located on the Chukchi Sea (Arctic Ocean) about 750 miles north of Anchorage, Alaska. Barrow, incorporated in 1958, has about 4,400 residents or a little less than half the Borough's population. Barrow is the administrative, economic, educational and transportation hub for the North Slope Borough. Barrow also serves as the seat of the North Slope Borough government and the regional center for health care and social services.

Projects such as Barrow and many others in Alaska have become increasingly more scrutinized due to the difficulty of realizing NED benefits. The subsistence way of life in rural Alaska is of

extreme significance to its people and must not be understated. The purpose of this presentation is to highlight specific challenges with feasibility reports in rural projects and to stress the OSE account's importance in the approval of future Alaskan projects.

Title: Environmental Performance Measures and Cultural Resources
Presenters: Karen Krepps, Detroit District and Michele Hope, Buffalo District

Abstract: The Detroit District, in 2005 received Section 203 of the Water Resources Development Act of 2000 (Tribal Partnership Program) funding to work with six tribes on a number of issues relating to their reservations. While all of the projects had cultural resource components, two of them were primarily cultural in their scope. In an effort to provide a measure of performance for the cultural resource, Dr. Krepps, with the assistance of the Buffalo District, drafted a matrix for evaluating cultural importance. As drafted, this matrix can be utilized to evaluate the importance of any cultural resource and can aid in the evaluation of projects and their prioritization by Divisions and Headquarters.

Title: Ethnobiology: A Pathway to Integration and Collaboration Across Peoples, Lands and Programs
Presenters: Tanis Toland, Sacramento District

Abstract: This presentation introduces the field of ethnobiology; describes examples of how the National Park Service and the U.S. Forest Service have incorporated ethnobiology (particularly ethnobotany) into land use planning and management; and suggests practical ways to apply the concepts and techniques from this exciting interdisciplinary field to the Corps' Civil Works program to facilitate integration and collaboration across peoples, lands, and programs. Ethnobiology shows promise for both conceptual and practical use in Civil Works planning, particularly for ecosystem restoration projects and for projects seeking to include non-traditional partners and stakeholders. It is an invitation to build relationships, bridge the ecological and cultural realms, and link the past with the present to solve problems and ensure a sustainable – environmental and cultural—future. Information is primarily based on the work of Dr. Kat Anderson, author of *Tending the Wild; Native American Knowledge and the Management of California's Natural Resources*.